State of Alaska
FY2009 Governor's Operating Budget

Department of Transportation/Public Facilities
Design and Construction
Results Delivery Unit Budget Summary

Design and Construction Results Delivery Unit

Contribution to Department's Mission

Improve the transportation system in Alaska and protect the health and safety of the people of Alaska by developing transportation and public facilities projects and constructing safe, environmentally sound, reliable, and cost effective highways, airports, harbors, docks, and buildings.

Core Services

Design: Project planning requires engineering, environmental and estimating services. Starting with the initial project funding, Design has primary responsibility for a project through the completion of a bid-ready set of plans, specifications for the legal and technical contract terms, and an engineer's estimate for the cost of construction. Accompanying the project plans and specifications, Design staff prepares geotechnical reports for the project site and materials sources, obtains the necessary interests in lands for the project, obtains the environmental clearances and project permits, and prepares plans and obtains agreements with utility companies for any utility relocations that may be required.

Design also provides a wide range of technical support functions to the department, other state and federal agencies, local governments, and the public. Examples include design assistance, traffic speed studies, bridge inspections, materials testing, the processing of utility, right-of-way and traffic permits, preparation of environmental documents, a full research program, and the Local Technical Assistance Program (both funded by the Federal Highway Administration). The Design and Construction Standards section develops standards that are in use throughout the state.

Construction: Administers construction contracts, provides field inspection and construction oversight, provides quality assurance that construction documentation and materials are in conformance with contract requirements during construction and closeout of projects, and reports Disadvantaged Business Enterprises/Minority Business Enterprise activity on construction projects.

Contracts: Reviews construction documents, provides bid packages, advertises and awards contracts, prepares certified bid tabulations, and helps resolve bidding disputes. This unit also coordinates, solicits, selects, prepares and administers professional services agreements.

Project Control: Coordinates and programs project funding; administers state and federal grants; provides engineering management support; prepares and manages the component's operating budget; develops, enhances, and maintains a management reporting system for capital projects; provides regional network administration and desktop computer support; and processes time and equipment charges to projects.

Statewide Public Facilities: Oversees all building planning, design and construction related activities and acts as the advocate for department-wide facility needs. This section provides cost estimates and management services necessary to renovate, repair or build new state owned public facilities.

End Result	Strategies to Achieve End Result
A: Improve DOT&PF efficiency. Target #1: Reduce the percent of administrative and engineering costs to 30% or less of total project costs. Measure #1: Percentage of administrative and engineering costs when compared to total project costs. Target #2: Advertise 75% of new highway and aviation construction project funding by April 30th. Measure #2: Percentage of highway and aviation construction project funding (determined by engineer's	**A1: Reduce design and engineering costs.** Target #1: Maintain design engineering (PE) averages at 15% or less of total project costs. Measure #1: Design engineering (PE) as a percentage of total project costs. Target #2: Improve the percentage of projects that exceed $1 million having formal pre-authorization scope meetings to 75%. Measure #2: The percentage of projects (with estimated

estimate) advertised by a given date. Target #3: Reduce the percentage difference between bid and final contractor payments to 8%. Measure #3: The percentage difference between contractor bids and final contractor payments.	construction bid amount over 1 million dollars) having formal pre-authorization scope meeting as compared to total projects receiving authority to proceed. **A2: Reduce construction project costs.** Target #1: Maintain construction engineering (CE) costs at 14.5% or less of total contractor payments. Measure #1: Construction engineering (CE) as a percentage of total contractor payments. **A3: Accelerate project closeouts.** Target #1: Close out 80% of construction contracts within the next fiscal year following the project completion date as stated in the Project Completion Letter. Measure #1: Percentage of contracts completed (i.e. Letter of Final Acceptance issued) by the end of the fiscal year following the project completion date.

Major Activities to Advance Strategies

- Design roads to appropriate standards
- Minimize in-house costs for preconstruction services
- Manage consultant contracts in a cost effective manner
- Timely close-out of construction projects
- Compare and contrast cost of in-house construction engineering (CE) with consultant CE
- Cross training between Design and Construction
- Involve Construction and Maintenance in design process from project scoping
- Explore innovative contracting methods
- Greater use of technology in the field

FY2009 Resources Allocated to Achieve Results

FY2009 Results Delivery Unit Budget: $99,681,400

Personnel:	
Full time	754
Part time	231
Total	985

Performance Measure Detail

A: Result - Improve DOT&PF efficiency.

Target #1: Reduce the percent of administrative and engineering costs to 30% or less of total project costs.
Measure #1: Percentage of administrative and engineering costs when compared to total project costs.

Percent of Project Costs Attributed to Administrative and Engineering Costs

Year	Central Region	Northern Region	Southeast Region	RDU Total	Target
FFY 2004	21%	26%	23%	22%	30%
FFY 2005	20%	22%	23%	21%	30%
FFY 2006	21%	23%	13%	18%	30%
FFY 2007	22%	24%	26%	24%	30%

Analysis of results and challenges: Percentages are calculated by summing up all administrative and

engineering costs – i.e, all costs that are not direct construction payments, right-of-way acquisition/relocation payments, or utility relocation payments – and dividing those administrative and engineering costs by the total of all project costs. The aim is to hold down the overhead that accompanies public project development, to get more of each capital dollar into construction or other related fieldwork that directly benefits the private sector and the traveling public.

Design and Construction has exceeded this target for several years.

Target #2: Advertise 75% of new highway and aviation construction project funding by April 30th.
Measure #2: Percentage of highway and aviation construction project funding (determined by engineer's estimate) advertised by a given date.

Percent of construction contracts advertised by April 30th

Year	Central Region	Northern Region	Southeast Region	RDU Total	Target
FFY 2005	31%	42%	51%	38%	75%
FFY 2006	47%	56%	27%	42%	75%
FFY 2007	54%	14%	66%	40%	75%

Analysis of results and challenges: Percentages are calculated by summing the engineer's estimates for all federal and general fund construction projects advertised by the target dates, then dividing that total by the total engineer's estimate amount of construction projects advertised in that federal fiscal year.

Regional project development will be accelerated to meet this target. Once the department has reached this goal, maintaining it will be little different in terms of work production than what is experienced today. The acceleration phase could result in a temporary increase in inflated construction costs due to less competition among already busy contractors.

Large projects in Northern Region, such as the $25 million for the Fairbanks International Airport runway and $21 million for the Richardson Highway projects, took longer to design and put out to bid because of the complexity of design and due to staff shortages. Advertising of the $17 million Northway Airport project was delayed due to the timing of securing FEMA funding.

Difficulty filling engineering positions and the resultant staff shortage is affecting the amount of time it takes to design projects and pushes advertising to later in the year.

Target #3: Reduce the percentage difference between bid and final contractor payments to 8%.
Measure #3: The percentage difference between contractor bids and final contractor payments.

Difference between contractor bids and final contractor payments

Year	Central Region	Northern Region	Southeast Region	RDU Total	Target
FFY 2004	14%	29%	9%	18%	8%
FFY 2005	15%	12%	6%	13%	8%
FFY 2006	12%	11%	5%	11%	8%
FFY 2007	6%	17%	5%	9%	8%

Analysis of results and challenges: This measure will be determined after a construction project is closed and the final contract amount is known. It will help determine how effective the department is in engineering and administering construction projects. Project cost overruns typically result from quantity overruns, change orders that correct design errors and address unforeseen conditions, and changes to project scope made after contract award. Although elimination of all cost overruns is unrealistic and even cost-prohibitive, they can be controlled by efficient designs, improved negotiation skills, and disciplined scope management.

Several large projects contributed to a high percentage difference in Northern Region. Chandalar Shelf Airport Snow Removal Equipment Building had a 79% change to add on planned work (Additive Alternates) once additional funding was obtained – this was purely due to the timing of the availability of federal funds. Kotzebue Dust Control and Road Improvements had a 42% change after more funding became available to pave more road surface to control dust. Valdez Airport increased 30% for redesign, relocation and installation of Federal Aviation Administration (FAA) instrument landing system work items at FAA's request. Parks Highway Denali Park

project increased 25% due to differing site conditions requiring excavated material to be hauled away and new material being hauled in.

A1: Strategy - Reduce design and engineering costs.

Target #1: Maintain design engineering (PE) averages at 15% or less of total project costs.
Measure #1: Design engineering (PE) as a percentage of total project costs.

Percent of Design Costs to Total Project Costs

Year	Central Region	Northern Region	Southeast Region	RDU Total	Target
FFY 2004	9%	10%	8%	9%	15%
FFY 2005	7%	8%	9%	8%	15%
FFY 2006	8%	9%	8%	9%	15%
FFY 2007	8%	9%	9%	9%	15%

Analysis of results and challenges: Ratios are calculated by summing the final design costs of all highway and aviation construction projects that receive final acceptance in a given state fiscal year, then comparing the total to the total project costs.

To provide design engineering services at 15% of the total project costs is a measure of the department's efficiency in the delivery of bid documents. The increasing complexity of the design process requires more effort than in previous years. Examples include public involvement demands, regulatory agency constraints, utility relocation costs, right of way costs, and the higher cost of utilizing consultants.

The results show that Design has been successful holding costs down and has exceeded this target for several years.

Target #2: Improve the percentage of projects that exceed $1 million having formal pre-authorization scope meetings to 75%.
Measure #2: The percentage of projects (with estimated construction bid amount over 1 million dollars) having formal pre-authorization scope meeting as compared to total projects receiving authority to proceed.

Percent of Projects having Scope Meetings

Year	Central Region	Northern Region	Southeast Region	RDU Total	Target
FFY 2004	47%	0%	50%	37%	75%
FFY 2005	74%	44%*	100%	64%	75%
FFY 2006	88%	42%*	100%	77%	75%
FFY 2007	90%	11%*	10%	64%	75%

This performance measure was established in the Governor's FY06 budget.
Northern Region reporting for FFY05-FFY07 reflects using the "one step" process for scoping meetings.

Analysis of results and challenges: Ratios are calculated by dividing the number of projects with formal scoping meetings by the total number of projects receiving authority to proceed.

Bringing all of the department's stakeholders together to discuss all aspects of the project prior to authorization leads to more efficient project development. People view scoping of projects as inconvenient. They may have other high, time sensitive priorities, but it is important to the overall project development efficiency to reach a consensus on the project scope.

* Northern Region results for FFY05-FFY07 reflect the use of a one-step process rather than formal scope meetings. The region recently began holding scope meetings, and will report using that criterion next year.

A2: Strategy - Reduce construction project costs.

Target #1: Maintain construction engineering (CE) costs at 14.5% or less of total contractor payments.
Measure #1: Construction engineering (CE) as a percentage of total contractor payments.

Construction Engineering Expressed as a Percentage of Total Contractor Payments

Year	Central Region	Northern Region	Southeast Region	RDU Total	Target
FFY 2004	10.2%	11.1%	12.1%	10.6%	14.5%
FFY 2005	13.0%	11.4%	11.1%	12.3%	14.5%
FFY 2006	11.8%	11.8%	10.9%	11.8%	14.5%
FFY 2007	11.5%	10.6%	8.2%	10.1%	14.5%

Analysis of results and challenges: This measure is determined after a construction project is closed and all construction charges are accounted for. Contract administration costs over the past several years have run at about 14.5%; however, the state's growing capital program is straining department resources and forcing the department to outsource more of its construction engineering (CE) work to other agencies as well as the private sector. Outsourced CE tends to be more expensive, so maintaining this target will be a challenge.

This measure is also a challenge because of the remoteness of most of the projects (increasing travel and transportation costs), and because the requirements of the federal funding agencies and the expectations of the traveling public tend to increase over time. All of these factors drive administrative costs up. This measure will change from year to year based on the type and size of projects completed. Small urban projects may require the same level of oversight, i.e., staff, as large rural projects. Projects that consist primarily of asphalt paving are typically completed in a short time resulting in low engineering costs compared to the contract value.

A3: Strategy - Accelerate project closeouts.

Target #1: Close out 80% of construction contracts within the next fiscal year following the project completion date as stated in the Project Completion Letter.
Measure #1: Percentage of contracts completed (i.e. Letter of Final Acceptance issued) by the end of the fiscal year following the project completion date.

Percent of Construction Contracts Closed Before End of Next Fiscal Year

Year	Central Region	Northern Region	Southeast Region	RDU Total	Target
FFY 2004	28%	52%	81%	45%	80%
FFY 2005	41%	60%	79%	59%	80%
FFY 2006	33%	76%	73%	57%	80%
FFY 2007	35%	73%	70%	60%	80%

Analysis of results and challenges: Percentages are calculated by dividing the number of projects completed as stated in the Project Completion Letter, in a given federal fiscal year by the number of projects receiving Final Acceptance, or the contract closure, by the end of the following federal fiscal year.

The burden of closing out a project largely falls on the same people who must prepare for their next construction assignment or who are already actively engaged in other construction projects. Nevertheless, timely closeout of projects is an important cost-savings benefit to the state as the task itself will be done more efficiently and in some cases its completion will permit leftover construction funds to be released to fund other projects.

Central Region continues to explore avenues to close out the backlog of projects to facilitate meeting this measure. One position was added to the Public Facilities branch to focus on closing out building projects. Consultant contracts for construction administration now include clauses enabling other project closeouts to be added to the contract. A revised Policy and Procedure (P&P) which reduces final review requirements has recently been drafted and should be implemented by the end of calendar year 2007.

Key RDU Challenges

- Earmarks provided by *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users*

(SAFETEA-LU) have typically been underfunded and cannot fit within our federal program. Increasing compartmentalization of Federal Highway funds is restricting our ability to manage the program.

- The aviation program must meet the challenges of changing federal airport program requirements including an expanded role in developing navigational system design plans. The Federal Aviation Administration (FAA) at the regional and national levels has increasingly restricted timeliness for delivery of both environmental approvals and project funding grants. We also continue to increase our discretionary funding beyond baseline entitlements by developing early delivery of high priority projects. These funding restrictions as well as increasing inflation are leading to a growing need for a state funded component to the airports capital improvement program.
- A key challenge continues to be to retain experienced engineers, right-of-way agents, and environmental analysts. Many are reaching retirement age. It is difficult to find and retain qualified engineering staff willing to take long-term assignments to remote sites, often requiring exhaustive overtime and on-site presence for up to six months during the summer with little time off.
- Tighter policies and compliance pressure regarding local, state and federal environmental issues is creating additional work.

Significant Changes in Results to be Delivered in FY2009

The Statewide Public Facilities component has been established to provide a central organization for all state owned buildings for which DOT&PF is responsible. This organization will be responsible for the major renovation, rehabilitation and construction of all existing or new facilities.

Major RDU Accomplishments in 2007

- Put more than $500 million of projects under construction in FFY07.
- Paved 0.34 lane miles (1.7 centerline miles) of gravel roads.
- Repaved 107 lane miles (38.5 centerline miles) of roads.
- Reconstructed 67.6 lane miles (35.9 centerline miles) of roads.
- Built 3.3 lane miles (1.1 centerline miles) of new roads.
- Implemented new 50/50 matching State/Municipal Harbor Facility grant program.
- Awarded design/build contract for Glenn Highway and Bragaw Interchange project.
- Began construction of Juneau's first grade-separated interchange, Egan Drive at Sunny Point.
- Responded to the October 2006 flood event that severely damaged the Richardson, Edgerton and Copper River Highways as well as the McCarthy Road, Dayville Road and Mineral Creek Road. Performed contract administration for emergency repairs at damaged sites.

Contact Information

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Design and Construction
RDU Financial Summary by Component

All dollars shown in thousands

	FY2007 Actuals				FY2008 Management Plan				FY2009 Governor			
	General Funds	Federal Funds	Other Funds	Total Funds	General Funds	Federal Funds	Other Funds	Total Funds	General Funds	Federal Funds	Other Funds	Total Funds
Formula Expenditures												
None.												
Non-Formula Expenditures												
Statewide Public Facilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	3,443.4	3,543.4
SW Design & Engineering Svcs	837.8	0.0	6,960.9	7,798.7	708.3	0.0	8,905.5	9,613.8	1,168.7	0.0	9,069.3	10,238.0
Central Design & Eng Svcs	90.7	0.0	16,945.0	17,035.7	389.2	0.0	18,174.9	18,564.1	506.2	0.0	18,976.3	19,482.5
Northern Design & Eng Svcs	163.8	0.0	12,977.2	13,141.0	239.9	0.0	14,825.3	15,065.2	314.2	0.0	15,425.9	15,740.1
Southeast Design & Eng Svcs	239.2	0.0	7,380.4	7,619.6	333.8	0.0	8,733.7	9,067.5	403.7	0.0	9,048.4	9,452.1
Central Construction & CIP	206.0	0.0	20,533.1	20,739.1	195.5	0.0	20,498.1	20,693.6	336.1	0.0	17,995.9	18,332.0
Northern Construction & CIP	280.9	0.0	14,742.7	15,023.6	382.6	0.0	14,463.3	14,845.9	456.1	0.0	14,856.6	15,312.7
Southeast Region Construction	173.0	0.0	6,321.2	6,494.2	56.8	0.0	7,231.0	7,287.8	97.8	0.0	7,482.8	7,580.6
Totals	**1,991.4**	**0.0**	**85,860.5**	**87,851.9**	**2,306.1**	**0.0**	**92,831.8**	**95,137.9**	**3,382.8**	**0.0**	**96,298.6**	**99,681.4**

Design and Construction
Summary of RDU Budget Changes by Component
From FY2008 Management Plan to FY2009 Governor

All dollars shown in thousands

	General Funds	Federal Funds	Other Funds	Total Funds
FY2008 Management Plan	**2,306.1**	**0.0**	**92,831.8**	**95,137.9**
Adjustments which will continue current level of service:				
-Statewide Public Facilities	0.0	0.0	3,379.4	3,379.4
-SW Design & Engineering Svcs	110.4	0.0	163.8	274.2
-Central Design & Eng Svcs	117.0	0.0	801.4	918.4
-Northern Design & Eng Svcs	74.3	0.0	600.6	674.9
-Southeast Design & Eng Svcs	69.9	0.0	314.7	384.6
-Central Construction & CIP	140.6	0.0	-2,552.2	-2,411.6
-Northern Construction & CIP	73.5	0.0	333.3	406.8
-Southeast Region Construction	41.0	0.0	251.8	292.8
Proposed budget increases:				
-Statewide Public Facilities	100.0	0.0	64.0	164.0
-SW Design & Engineering Svcs	350.0	0.0	0.0	350.0
-Central Construction & CIP	0.0	0.0	50.0	50.0
-Northern Construction & CIP	0.0	0.0	60.0	60.0
FY2009 Governor	**3,382.8**	**0.0**	**96,298.6**	**99,681.4**